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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,496

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52044 7590 08/16/2011  
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EXAMINER

WENDELL, ANDREW

ART UNIT

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2618

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/549,496	<b>Applicant(s)</b> KATO ET AL.
	<b>Examiner</b> ANDREW WENDELL	<b>Art Unit</b> 2618

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br/>           Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>           Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
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**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huisken (US Pat# 6,483,456) in view of Uchida et al. (US Pat Pub# 2005/0188417).

Regarding claim 1, Huisken teaches a wireless terminal device for (i) receiving a first radio signal relating to a first service which is a broadcasting service, and a second radio signal relating to a second service, the first radio signal representing a plurality of programs as well as periods during which the respective programs are represented, and (ii) performing reproduction of one of the programs selected by a user, and predetermined processing based on the second radio signal (Col. 1 lines 27-Col. 2 lines 10), the wireless terminal device comprising a unit operable to generate a first baseband signal and a second baseband signal one at a time according to a switching signal 6 (Fig. 1), the first baseband signal being generated by frequency converting the received first radio signal and the second baseband signal being generated by frequency converting the received second radio signal 4,5, 7, and 8 (Fig. 1); a first baseband unit operable to demodulate the first baseband signal to a first data signal 7 (Fig. 1); a second baseband unit operable to demodulate the second baseband signal to a second data signal 8 (Fig. 1); and a switching unit 6 (Fig. 1) operable to identify,

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with reference to the first data signal, a period during which the first radio signal representing the selected program is received, and control the tuner unit by outputting thereto the switching signal indicating a first period that includes the identified period, so that the tuner unit generates the first baseband signal during the first period and the second baseband signal during a second period that is a period other than the first period, wherein the wireless terminal device reproduces the selected program from the first data signal, and conducts the predetermined processing using the second data signal (Col. 1 lines 27-Col. 2 lines 10). Huisken fails to teach a tuner unit and time division multiplexed programs.

Uchida teaches a wireless terminal device for (i) receiving a first radio signal relating to a first service which is a broadcasting service, and a second radio signal relating to a second service, the first radio signal representing a plurality of time-division multiplexed programs as well as periods during which the respective programs are represented (Sections 0070-0071), and (ii) performing reproduction of one of the programs selected by a user, and predetermined processing based on the second radio signal, the wireless terminal device comprising a tuner unit 202 (Fig. 3) operable to generate a first baseband signal and a second baseband signal one at a time according to a switching signal 206 (Fig. 3).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a tuner unit and time division multiplexed programs as taught by Uchida into Huisken's terminal in order to increase convenience for the user (Sections 0004-0006).

Regarding claim 2, the combination including Uchida teaches wherein the tuner unit includes a local oscillator operable to generate a local signal at (i) a first frequency during the first period for use in the generation of the first baseband signal and (ii) a second frequency during the second period for use in the generation of the second baseband signal, according to the switching signal, and the tuner unit generates, using the local signal, the first and second baseband signals by frequency converting the first and second radio signals, respectively (Fig. 3).

Regarding claim 3, the combination including Huisken teaches wherein the second service is a bidirectional communication service, and the second baseband unit demodulates the second baseband signal to the second data signal, and modulates a third data signal to a third baseband signal, the third data signal being transmission data relating to the second service, the wireless terminal device further comprising a transmitting unit operable to generate a third radio signal by frequency converting the third baseband signal, and transmit the third radio signal (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 4, the combination including Huisken teaches wherein the local oscillator generates the local signal at a third frequency during a transmission period of the bidirectional communication, and the transmitting unit generates the third radio signal by frequency converting the third baseband signal using the local signal of the third frequency (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 5, the combination including Uchida teaches wherein the tuner unit includes: a first tuner operable to generate a first local signal exclusively during the

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first period according to the switching signal, and generate the first baseband signal by frequency converting the first radio signal using the first local signal; and a second tuner operable to generate a second local signal exclusively during the second period according to the switching signal, and generate the second baseband signal by frequency converting the second radio signal using the second local signal (Fig. 3).

Regarding claim 6, the combination including Uchida teaches a power-saving unit operable to restrict or stop supply of operating power to (i) the second tuner during the first period and (ii) the first tuner during the second period, according to the switching signal (Fig. 3).

Regarding claim 7, the combination including Huisken teaches a power-saving unit operable to restrict or stop supply of operating power or an operating clock signal to (i) the second baseband unit during the first period, and (ii) the first baseband unit during the second period, according to the switching signal (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 8, the combination including Uchida teaches a first antenna 201 (Fig. 3) having a selective gain to the first radio signal, and operable to output a received signal to the tuner unit; and a second antenna having a selective gain to the second radio signal, and operable to output a received signal to the tuner unit, wherein the tuner unit includes a switching subunit operable to select one of the signal received by the first antenna during the first period and the signal received by the second antenna during the second period, according to the switching signal, and the tuner unit

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generates the first baseband signal and the second baseband signal both by frequency converting the signal selected by the switching subunit (Fig. 3).

Regarding claim 9, the combination including Uchida teaches wherein the tuner unit includes a variable bandpass filter operable to exclusively pass, according to the switching signal, the first radio signal during the first period and the second radio signal during the second period, out of a reception signal containing the first and the second radio signals, wherein the tuner unit generates the first baseband signal and the second baseband signal both by frequency converting an output signal of the variable bandpass filter (Fig. 3).

Regarding claim 10, the combination including Huisken teaches wherein the first service is provided by a cellular system in which each of a plurality of base stations provided for a geographic cell transmits the respective first radio signal, and the second radio signal contains positional information for measuring a current position of a receiver device of the second radio signal, and the wireless terminal device periodically measures its own current position based on the received second radio signal, and when the measured current position moves from a first cell into a second cell, the wireless terminal device stops receiving the first radio signal transmitted from a base station of the first cell and commences receiving the first radio signal transmitted from a base station of the second cell (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 11, the combination including Huisken teaches wherein the second radio signal contains positional information for measuring a current position of a receiver device of the second radio signal, and the wireless terminal device

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periodically measures its own current position based on the received second radio signal to calculate a moving speed, and receives the first radio signal in one of a plurality of different operating modes that corresponds to the calculated moving speed (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 12, the combination including Huisken teaches displays information relating to the predetermined processing according the second radio program, on a display along with the selected program (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 13, the combination including Huisken teaches wherein the first service is Digital Video Broadcasting or Digital Audio Broadcasting in Europe (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

Regarding claim 14, the combination including Huisken teaches wherein the second service is a wireless Local Area Network, a mobile phone, a Global Positioning System, or remote control of a device (Fig. 1 and Col. 1 lines 27-Col. 2 lines 10).

3. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huisken (US Pat# 6,483,456) in view of Uchida et al. (US Pat Pub# 2005/0188417) and further in view of Johnson (US Pat Pub# 2004/0176058).

Regarding claim 15, Huisken teaches a wireless terminal device for (i) receiving a first radio signal relating to a first service which is a broadcasting service, and a second radio signal relating to a second service, the first radio signal representing a plurality of programs as well as periods during which the respective programs are represented, and (ii) performing reproduction of one of the programs selected by a



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user, and predetermined processing based on the second radio signal (Col. 1 lines 27-Col. 2 lines 10), the wireless terminal device comprising a unit operable to generate a first baseband signal and a second baseband signal one at a time according to a switching signal 6 (Fig. 1), the first baseband signal being generated by frequency converting the received first radio signal and the second baseband signal being generated by frequency converting the received second radio signal 4,5, 7, and 8 (Fig. 1); a first baseband unit operable to demodulate the first baseband signal to a first data signal 7 (Fig. 1); a second baseband unit operable to demodulate the second baseband signal to a second data signal 8 (Fig. 1); and a switching unit 6 (Fig. 1) operable to identify, with reference to the first data signal, a period during which the first radio signal representing the selected program is received, and control the tuner unit by outputting thereto the switching signal indicating a first period that includes the identified period, so that the tuner unit generates the first baseband signal during the first period and the second baseband signal during a second period that is a period other than the first period, wherein the wireless terminal device reproduces the selected program from the first data signal, and conducts the predetermined processing using the second data signal (Col. 1 lines 27-Col. 2 lines 10). Huiskens fails to teach a tuner unit and time division multiplexed programs and a single chip IC.

Uchida teaches a wireless terminal device for (i) receiving a first radio signal relating to a first service which is a broadcasting service, and a second radio signal relating to a second service, the first radio signal representing a plurality of time-division multiplexed programs as well as periods during which the respective programs

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are represented (Sections 0070-0071), and (ii) performing reproduction of one of the programs selected by a user, and predetermined processing based on the second radio signal, the wireless terminal device comprising a tuner unit 202 (Fig. 3) operable to generate a first baseband signal and a second baseband signal one at a time according to a switching signal 206 (Fig. 3).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a tuner unit and time division multiplexed programs as taught by Uchida into Huisken's terminal in order to increase convenience for the user (Sections 0004-0006).

Huisken and Uchida fail to teach a single-chip IC.

Johnson teaches a single-chip IC or an IC chip set for use in a wireless terminal device (Section 0076).

Therefore, it would have been obvious at the time of the invention to one of ordinary skill in the art at the time the invention was made to incorporate a single-chip IC as taught by Johnson into a tuner unit and time division multiplexed programs as taught by Uchida into Huisken's terminal in order to better support higher frequency applications (Section 0010).

Regarding claim 16, Uchida further teaches wherein the tuner circuit includes a local oscillator operable to generate a local signal at (i) a first frequency during the first period for use in the generation of the first baseband signal and (ii) a second frequency during the second period for use in the generation of the second baseband signal, according to the switching signal, and the tuner circuit generates, using the local signal,

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the first and second baseband signals by frequency converting the first and second radio signals, respectively (Fig. 3).

Regarding claim 17, Uchida further teaches wherein the tuner circuit includes: a first tuner operable to generate a first local signal exclusively during the first period according to the switching signal, and generate the first baseband signal by frequency converting the first radio signal using the first local signal; and a second tuner operable to generate a second local signal exclusively during the second period according to the switching signal, and generate the second baseband signal by frequency converting the second radio signal using the second local signal (Fig. 3).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW WENDELL whose telephone number is (571)272-0557. The examiner can normally be reached on 8:00-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on 571-272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew Wendell/  
Primary Examiner, Art Unit 2618

8/14/2011